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ABSTRACT

This fastback presents the essentials for understanding how to differentiate instruction to meet the learning needs of all students in today's classrooms. It focuses on: "The Need for Differentiated Instruction" (determining learning needs, deciding what to differentiate, and principles of differentiated instruction); "Strategies for Differentiating Levels of Challenge and Complexity" (the learning environment, identifying curriculum essentials, working from student needs, stations, tiered activities, compacting, and flexible grouping); "Teaching to the Learning Styles" (understanding learning styles, using multiple intelligences to differentiate, creative teaching strategies, determining students' learning styles, and managing the process); and "Assessment Strategies for a Differentiated Classroom" (pre-assessment, observation, student portfolios, questioning and self-evaluation, and grading). The fastback concludes that a differentiated classroom can reach many more students in the education system by responding to their individual learning styles, abilities, disabilities, and cultural and linguistic backgrounds. (Contains 12 references.) (SM)

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Differentiated Instruction

Joan Franklin Smutny

2002

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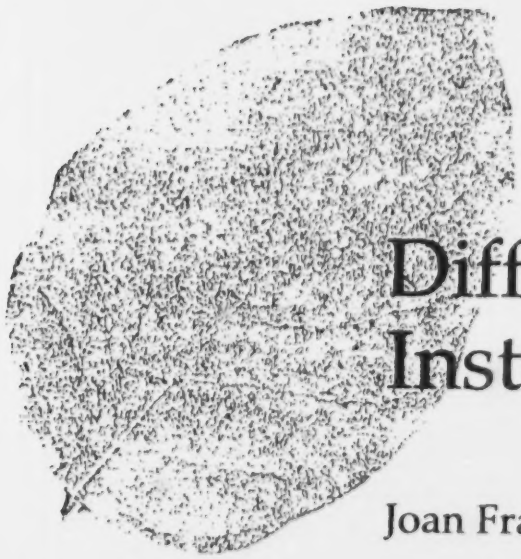

Differentiated Instruction

Joan Franklin Smutny

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Joan Franklin Smutny is founder and director of the Center for Gifted at National-Louis University. The center annually offers programs for more than 3,000 gifted children, age four through grade 10. Smutny also teaches graduate courses in gifted education at the university.

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Differentiated Instruction

by
Joan Franklin Smutny

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Table of Contents

Introduction 7

The Need for Differentiated Instruction 8
- Determining Learning Needs 8
- Deciding What to Differentiate 10
- Principles of Differentiated Instruction 11

Strategies for Differentiating Levels of Challenge and Complexity 14
- The Learning Environment 15
- Identifying Curriculum Essentials 16
- Working from Student Needs 18
- Stations 19
- Tiered Activities 19
- Compacting 20
- Flexible Grouping 22

Teaching to the Learning Styles 24
- Understanding Learning Styles 25
- Using Multiple Intelligences to Differentiate ... 26
- Creative Teaching Strategies 30
- Determining Students' Learning Styles 31
- Managing the Process 31

Assessment Strategies for a Differentiated Classroom 35
Pre-Assessment 35
Observation 37
Student Portfolios 38
Questioning and Self-Evaluation 40
Grading 41

Conclusion 45

References 46

Introduction

The idea behind differentiated instruction is adjusting instruction to fit the skills and experience level of each student in a classroom. An early example of this process is the one-room schoolhouse. A teacher with seven-year-olds and 12-year-olds in one class adjusted instruction to fit the experience level of individual students. Although teachers had curriculum standards for achievement in the various subject areas, they had to apply these standards individually.

Today's teachers do not have to cope with such a wide range of ages in the student body, but they do face significant differences in learning styles, skill and ability, and linguistic and cultural background. These differences make the "one size fits all" principle inoperative. This fastback includes the essentials for understanding how to differentiate instruction to meet the learning needs of all students in today's classrooms.

The Need for Differentiated Instruction

The prospect of differentiated instruction can seem overwhelming. Some teachers feel, "As things stand today, I can barely squeeze in all of the responsibilities heaped on me by the administration, school board, and community. Is it realistic for me to try to give each child a custom-made education ideally suited to his or her learning styles, needs, and abilities?"

Expectations that seem unrealistic can scare off teachers. They may think they have to adjust instruction every moment for every student. The effort to differentiate does not demand such a radical change. What it asks, initially, is a new orientation to teaching. It begins with the students — their abilities, disabilities, learning styles, etc. — rather than with fixed curriculum goals. Most teachers who differentiate do not do so at all times. They differentiate only when they see a specific need.

Determining Learning Needs

From the start of the school year, it takes some time before teachers get to know their students well. As

months pass, they become familiar with the ones who struggle in some subjects, the ones who always seem bored and eager to move faster and the ones who, because of a language barrier or disability, cannot process information as quickly as their classmates. An observant teacher also may notice other, more subtle differences among the students. For example, a teacher may see that a student initially thought to be average is able to make some unusual discoveries in a hands-on experiment. Or a teacher may discover that the reason a child struggles in a subject is that he or she needs reinforcement in a basic skill area (Smutny, Walker, and Meckstroth 1997).

Differentiated instruction requires teachers to observe children in a variety of activities within subject areas to determine the circumstances under which they learn best. A traditional classroom, where students have to adjust themselves to a set curriculum, tells little about their abilities and more about their success or failure in certain tasks.

The following guidelines offer a way of creating profiles on students to help determine learning needs:

- Create a folder to collect observations, insights, test results, and assessments about behavior and achievement on each student. Focus on learning situations where the students work best, as well as their learning styles, interests, and weak areas.
- Talk to parents about their children's strengths, problems, interests, and past experiences in school. Put any useful insights or observations in the folders.

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- Create a working environment with flexible seating arrangements and learning centers that draw on multiple intelligences and a wide variety of materials. Where do students gravitate? Which activities pose problems and which promote the most growth and achievement?
- Allow for different ways for children to show what they know and to express their originality and thinking process. Take notes on their performance.

As familiarity with students' learning needs grows, the teacher can more effectively accommodate those needs.

Deciding What to Differentiate

There are probably as many ways to differentiate as there are ways to think. For classroom teachers, the main questions to keep in mind are: What are the most important concepts, ideas, and skills for my students to learn? and How and when do I differentiate instruction so that I can meet my students' individual learning needs and promote their growth?

Once the teacher becomes familiar with the students — their strengths, weaknesses, interests, work habits, preferred learning styles — he or she can begin modifying the curriculum. These changes will focus on content, process, or products (Tomlinson 1999). For example, simplifying a mathematical process won't help a child who struggles with fundamental concepts in the content. A gifted child will not benefit from more advanced content if the activities and materials he or she uses are

not also multi-faceted, complex, creative, and open-ended. When considering the learning needs of a student, think of the following questions:

- Does the level and pace of the content match the student's ability and interest? Does he or she fall behind in any area? Does he or she finish assignments quickly and well? (*Content*)
- Does the student learn more by doing (through experiments, building, constructing, designing, etc.), or by listening to information? Does the student show his or her greatest gifts in creative processes such as open-ended assignments? (*Process*)
- Does the student have a hard time relating to the materials, the products needed to express what he or she knows? (*Product*)

Many teachers begin using the principles of differentiated instruction while students are practicing new concepts or knowledge in exercises or problems.

Principles of Differentiated Instruction

Teachers who differentiate do not do so all the time. Though there are instances when direct instruction of the whole class takes place, they nevertheless follow certain principles.

- The teacher begins instruction with student differences and modifies the curriculum based on the most important content within that curriculum and on individual learning needs.

- The teacher adjusts content, process, and products (materials) in response to student learning profiles, strengths, problem areas, and interests.
- The teacher employs a range of strategies for differentiating the curriculum, such as learning stations, curriculum compacting, tiered instruction, interests groups, cluster groups, creative activities and materials, etc.
- The teacher assesses individual student achievement and the effectiveness of differentiated curriculum as she or he teaches (rather than at the end of a unit).
- Students actively participate in their own learning and make choices within structured assignments and activities.
- The teacher maintains flexibility in modifying aspects of the curriculum in order to maximize growth and learning for each student.
- Students move flexibly from one level of complexity to the next, one kind of process to the next, rather than following a sequence lock step.
- The teacher uses a wide range of creative approaches to deliver the curriculum.

One of the immediate results of a differentiated curriculum is a fundamental change in the way teachers see students. To quote a fifth-grade teacher:

> Because of this new flexibility in the curriculum, where every child was working at the level and in the mode that served them best, I actually stopped thinking of my students as being fast or slow. Because the

class is set up now to make each child go as far as they can, I'm more aware of each one's successes, each one's struggles. And more times than I'd like to admit, students I once thought had problems in certain subjects turned out to be very talented; they only lacked the help they needed in a skill area so they could develop their abilities. It's scary to think that I could have inadvertently kept a child back simply because I didn't know this!

This last example points to a clear advantage of differentiating instruction: freeing our students from categories and giving them opportunities to learn and grow in the ways that they do best. Differentiating the curriculum breaks the determinism that often accompanies a more rigid approach. It also creates a more fluid and flexible sense of learning within the child.

Differentiated instruction makes students less competitive with each other because it does not emphasize a hierarchy of ability. Instead, it recognizes a range of intelligences; and each child can capitalize on strengths, get remedial help for weak areas, and compete with previous achievements.

Strategies for Differentiating Levels of Challenge and Complexity

Practitioners and researchers have generated a wide range of useful strategies for differentiating instruction. How teachers use them, however, can be as individual as anything else in the classroom. Teachers should determine how they see differentiation working in their classroom, given their teaching style and their students' learning preferences, strengths, and weaknesses. Teachers who are just beginning to explore the idea of differentiating should start small. When teachers integrate new strategies gradually (as needs arise), they will find that the ability to modify instruction grows. To force too much right away will create tension. Differentiating should energize and inspire, not burden.

All of the strategies listed here assume that the teacher knows his or her students' strengths, needs, and learning styles and can identify those who will need an accelerated instruction and others who could use more practice.

The Learning Environment

Differentiating instruction begins with the classroom environment — not only how teachers set up the room and the kinds of workspaces they design, but also the culture they create. How a teacher sets up an environment depends on the needs of the students, the curriculum goals for the year, and available resources. The following list of questions may help.

The Space

How are the seats arranged? What kind of flexibility exists in seating arrangements?

Is there room for resource areas, such as learning centers?

Can students engage in activities or projects at these centers on their own?

Do children have access to materials and activities that reflect their learning styles and interests?

Can students circulate from one activity to a more complex one with minimal disturbance or inconvenience?

Can shifting between whole-class instruction to small-group work be done without spending an inordinate amount of time shifting things around?

Is the room visually appealing — a place that invites students to come in and do things?

Do the resources draw on a range of intelligence areas and are students drawn to particular resources?

The Atmosphere

Does the beginning of the school day have any fun activities that help the class start on the right foot?

Is there communication with parents to discover their children's strengths, problem areas, learning preferences, interests, etc?

Are students encouraged and respected in the work they do?

Is there a standard of behavior that governs student interactions and do all students understand what this is?

Is there tolerance for criticism or bullying between students?

Do some children interrupt or talk over other students?

Is there as much concern about students treating each other with respect as there is about following directions?

Do the students seem engaged in their work and willing to take risks?

Most differentiated classrooms provide flexible movement and a rich variety of resources. They create work areas and activities that help students become more active and independent as learners; and they set a tone that helps children feel safe from ridicule, able to progress in their own way, respected both for their effort and their work, and supported when they need it.

Identifying Curriculum Essentials

Before teachers adjust areas of the curriculum to match students' needs, they must think carefully about

what they want all students to learn and then identify the key concepts, ideas, principles, and skills in each subject area. Tomlinson and colleagues (2002) explore this challenge in *The Parallel Curriculum*, where the "core curriculum parallel" enables teachers to focus on the most fundamental knowledge, structure, and purpose of a discipline. It is not merely a matter of breaking the subject down into important facts and figures, but of mining the subject to identify key principles.

These questions can help teachers find key principles:

What proficiencies should all students take away from this unit or set of units?
Why does it matter that they know these principles, rules, or facts?
Where do these essential concepts, principles, skills, etc., lead students and why is this important to the discipline? To the students and their future?
How should this most essential content be organized so that students can understand and apply it?
How can the essential meaning and purpose of the discipline be presented to students?

Heacox (2002) recommends that teachers begin differentiating with two levels of questions — "essential" and "unit." Essential questions involve overarching themes, concepts, and principles. An example might be: What is an ecosystem? Unit questions evolve from the former and include specific information and skills that lead to higher-level thinking. An example would be:

How has the introduction of new species affected the flora and fauna in our state? Often, these questions tie in with curriculum standards. Keep the number of questions relatively low (Heacox recommends no more than five) and write them in simple, child-friendly language. These questions not only guide the teacher, but also create a conceptual structure for the students to follow.

Working from Student Needs

Once teachers determine what their students should learn, key questions and curriculum standards they should address, and products or projects the students will use to show what they have learned, they can address student needs. Heacox suggests a formula for thinking about differentiating instruction that can help teachers plan: *content + process + product = the learning experience* (2002, p. 72). Teachers should consider what changes they can make to the content to help students, what activities students can do to reinforce what they learned previously and plan for future concepts, and what alternative products students can do that demonstrate mastery.

As teachers prepare for the activities in a unit, they focus on how they will integrate higher-level thinking to challenge students ready for more complex tasks. In math, giving some students an opportunity to practice a computation they find difficult and other students a chance to take what they know and apply it to a challenging problem will enable everyone in the class to learn with a minimum of frustration.

Stations

Stations are designated areas of the classroom where students can work on different tasks within a unit. These areas often are sequential, with each one representing a higher level of complexity than the one before it. Learning stations are not ability groupings; students are not separated into fast, average, or slow groups. The level of complexity at each station is less visible, and children move freely from one task to the next as they master the material. As described by Tomlinson (1999), a unit can have any number of stations, and students may visit different stations according to their needs.

Teachers create stations to address specific learning needs: Who requires more practice? Who has mastered most of the content and is under-challenged? As students do their assigned work, teachers may find that a student in one station actually needs to be moved to a more challenging one or that a child needs more instruction. Stations create flexibility in the way teachers deliver the curriculum to students.

Tiered Activities

Like stations, tiered activities also seek to ensure that all students in the class learn the core concepts and work at a level appropriate for them. The theory behind tiered activities is that a class of students with different experience and ability levels still can draw on the same principles and concepts. While staying focused on the essential content of the unit, teachers should think of the skills and conceptual understanding required and then design an

activity and identify the level of complexity it involves. An assignment might be:

> Review a speech calling for our government to dig for oil in the Arctic. Analyze how scientific information is used in the arguments presented. Write your own speech contesting or agreeing with these arguments.

This is a complex activity that assumes students have learned about the ecology of the Arctic and the potential environmental damage created by oil wells. It also assumes that students can synthesize different sources of information and analyze the "holes" in arguments. In tiered assignments, teachers can take this activity and design other versions at different levels of complexity. For example, some students may explore the yearly migrations and foraging patterns of the caribou and how oil wells would affect their routes. Another group may study the science of oil wells themselves — the chemicals they release into the air, how frequently wells spill, and how much pollution and potential environmental damage could take place in one year, two years, and so on.

Tiered activities work well for sequential subjects, such as math and science. But they also apply to other subjects in which teachers differentiate instruction in response to preferred learning styles or interests.

Compacting

Compacting assumes that some children, because of prior experience, high ability, high motivation, interest,

or learning outside the classroom, may possess knowledge and skills that place them at a different level than other classmates. To compact, teachers first review content with a focus on what might be eliminated or adjusted for students who have already mastered many of the concepts and skills. When teachers assess students for curriculum compacting, they consider different ways to measure students' levels of knowledge and expertise. Assessment may take the form of a simple test, an assignment in class, a conference, a portfolio, or a project.

After assessment, teachers identify the areas in which students may still need more instruction or practice. Students can master these areas by participating in the class when teachers plan to teach certain concepts, working on these areas independently, doing homework assignments, or arranging for a tutorial. After learning concepts and skills that they lacked, these students can then move on to more challenging content. What teachers *don't* want to do is to give children work that repeats what they have mastered or that provides only a surface enrichment. Differentiated instruction must give all students challenge and incentive to apply themselves in new ways.

Compacting can apply to a range of situations. A teacher might have a student from another country, for example, who already knows most of the math planned for the first half of the school year. A teacher might have a child who loves languages and may simply want to move ahead at a faster pace because he or she is more motivated.

Most teachers create a contract (signed by student, teacher, and parent) that specifies the project or task a child will do, the materials involved, the product, and the deadline. Teachers must be specific about the procedures for compacting: pre-assessment, compacted curriculum plan, choice of independent projects. They must include criteria for high quality work, learning goals, and a timeline for completing assignments.

Flexible Grouping

An effective way to vary the pace and level of challenge in the classroom is to use flexible grouping. This strategy enables teachers to group students with similar learning needs, styles, or interests. Teachers can maintain these groups for a day or longer and then change the composition of the groups as student needs and the learning situation alter.

Teachers should consider grouping students any time they notice that some students have mastered content that others have not. Once teachers determine that students could benefit from flexible grouping, they should follow these guidelines:

- Design assignments that the groups can tackle with minimum input. They should provide enough challenge to stimulate but not so much that students feel overwhelmed or need constant attention.
- Give each group step-by-step instructions and examples to guide the process.
- Create a clear set of rules to ensure fairness. These

24

rules should spell out how much noise is permissible and how students should treat each other. Consider having a "rules monitor" in situations where groups become too boisterous.

- Some small-group activities may require a leader or recorder. This could be a rotating office.
- Be clear about what each *individual* student is responsible for — what he or she must do and produce by the end of the process.

Teachers who are more accustomed to whole-class instruction should start small. They should attempt flexible grouping in a skill area in which students have different levels of mastery and keep it short for the first few tries. Once teachers become more comfortable, they can try a longer process involving different resources.

The key to these techniques is flexibility, which enables teachers to adjust instruction. Teachers who design activities in this way can create a classroom in which no child falls behind, nor is anyone kept back.

Teaching to Learning Styles

Differentiating instruction enables teachers to do more than adjust the pace and level of challenge. It also responds to students' learning styles and interests. This is particularly important for children with nonacademic or nontraditional learning styles. Here is an example from a mother:

> I couldn't figure out what Jake's problem was. At home, he was the fix-it guy. We turned to him when one of our bikes was out of order. He was always the one on a family trip who figured out the map and where we were and what routes were the best. He could problem solve anything in a sort of on-the-spot way — from family arguments to games with neighborhood kids to figuring out how to create an environment more attractive to migrating warblers! At school, this kid who learned everything at lightning speed struggled through math and reading classes, barely scraping by.

In a differentiated classroom, Jake could use his tactile/kinesthetic style of learning and experience for greater success. Students whose learning styles are not

appropriately addressed in the classroom eventually develop negative thoughts about themselves and school. Differentiating instruction helps to prevent underachievement among these students by giving them more choices in the way they process information and in the kinds of activities and materials they use to show what they understand.

Understanding Learning Styles

Figuring out how to differentiate instruction depends on knowing students' learning and thinking styles. Gardner's theory of multiple intelligences (1993) has generated a mass of ideas and further research on how to modify instruction in the classroom. Other educators (McCarthy 1990; Kolb 1984) also have explored different modes of learning that stimulate important questions about students:

- Do these students seem more comfortable getting all the facts about a subject through teacher lectures and displays?
- Do they seek the meaning of what they have to learn first? Do they prefer to reflect on the relevance of information and like to create innovations from what they have learned?
- Do they seek opportunities to test and experiment with new learning? Do they have to wait for the chance when they can *do* something with the concepts taught in class?
- Do they chafe at rigid assignments confined within set time limits? Do they seem intrigued and eager

when given independent projects or allowed to pursue their work in new directions?

- Do they like the orderly presentation of information and concepts? Do they seem distressed whenever directions are open-ended or don't provide specific goals and deadlines in a systematic way?
- Do the students prefer to learn in society with others who have similar interests and learning styles? Do they need interaction with others to help them process and test information?

Questions such as these reveal how certain learning preferences may make assignments less accessible to some children. To return to the example of Jake, one could speculate that this child needs to know the relevancy of his work — some way of connecting to math and reading assignments — and thrives in situations where he can solve real problems, sketch out solutions, explore subjects through simulations, and acquire new knowledge by building, constructing, and designing. Jake may not learn well in situations where he has to sit still and listen to lengthy explanations or instructions by a teacher and perform tasks that have no relevance that he can see.

Using Multiple Intelligences to Differentiate

Howard Gardner (1993) has created a model for conceptualizing intelligence that has given teachers a framework for differentiating instruction. Children do not fit neatly into any of these categories. Rather, stu-

dents often have strong inclinations toward a particular kind of learning style or group of related styles. It is the teacher's job to discover what these are and then teach to students' strengths. Following are intelligences identified by Gardner and examples of how to incorporate them into the various content areas:

Verbal/Linguistic: speaking, listening, reading, writing.

In mathematics, to acquire mastery in computation, students can invent a story where the plot centers on numbers and calculation.

To analyze the contrasting views of an issue in social studies, students can write a news story about a hotly debated issue — synthesizing different opinions and trying to be fair to all sides.

Logical/Mathematical: thinking and reasoning with numbers and abstract patterns.

In writing, students can study line, pattern, and shape in paintings or photographs to create new imagery in poetry and prose. They can consider such questions as: How is a tree in this picture like the deer in the pasture? How is time like the river? How is a child like a star?

In social studies, to increase understanding of maps, students can compare two maps of the world (for instance, a historical one and the Arno Peters map) and determine accuracy in terms of relative proportions and sizes, etc.

Visual/Spatial: processing ideas and information with images, mapping, visualizing, drawing.

To acquire mastery in computation in mathematics, students can estimate how many visible brush strokes are on a painting and then explain their calculations.

To analyze biases and opinions about an issue in social studies, students can examine political cartoons. They can create a cartoon of their own that expresses many of their fellow students' feelings about something in their school, community, or world.

Musical/Rhythmic: exploring melody, tone, rhythm, sound patterns and structures, song.

In social studies, to expand the understanding of another time, place, or culture, students can choose a musical tradition in a particular historical period or geographical location and research the evolution of this form, relating it to history, culture, and society.

In mathematics, students can demonstrate flexibility with number theory through a variety of rhythms.

Bodily/Kinesthetic: learning and understanding through movement, dance, mime, dramatics.

In science, to sharpen observational skill and critical thinking about natural phenomena, students choreograph a dance about weather changes or some other phenomena or create a mime piece about an angry storm.

In social studies, to compare social customs of the past to those of the present, students can stage imaginary interviews with time-travelers who discuss what aspects of the past and present they prefer and why.

Interpersonal: making discoveries through group cooperative efforts, sharing, interviewing, relating.

In writing, to explore the elements of plot, students can work in groups to develop an alternative plot for a fairytale.

To stimulate critical thinking when reading, students can work together to create a profile of the literary characters and their impressions of them.

Intrapersonal: learning by independent work, contemplation and experimentation alone, self-paced instruction.

To analyze different points of view in reading and writing, students can study a story or novel from a character's point of view and write about this.

Naturalist: gaining insights and knowledge by working outdoors, exploring patterns in nature, classifying and sorting.

In science, to sharpen observational skills and critical thinking, students can compare nature with nature art or classify flora, fauna, and other phenomena (types of clouds, etc.). They can explain the science represented in artistic work.

To increase the recall of details in reading, students can focus on the flora and fauna of a story or novel and identify and sketch the different species.

These activities are just a few examples that teachers can develop more fully when they start teaching to their students' learning styles.

Creative Teaching Strategies

In many ways differentiated instruction is a creative process. It asks teachers to take the curriculum they have and to create diverse ways for children to reach learning goals. Books on differentiated instruction often include creative activities, particularly as they apply to learning styles.

An effective way to teach to students' learning styles is through the use of the arts. Many teachers confine creative work to visual and performing arts activities and to enrichment. But contrary to the stereotype of the arts as frills or mere "enrichment," they include a wide range of learning preferences and play an important role in stimulating cognitive growth. Goertz (2002) envisions art instruction as the "fourth R" in education and argues that it increases the skills of observation, abstract thinking, and problem analysis:

> Education in art is an invitation to use the reasoning skills of an artist. The artist visualizes and sets goals to find and define the problem, chooses techniques to collect data, and then evaluates and revises the problem solution with imagination in order to create. . . . The artist, in his or her creative process, requires a high-order thought process. (p. 476)

Integrating creativity and the arts into the academic curriculum enables children with different learning styles to apply their reasoning and problem-solving abilities in completely new ways.

Determining Students' Learning Styles

Collecting information about students' learning styles may seem a formidable task at first, but there are ways to accomplish this without the teacher doing all the work.

Gregory and Chapman (2002) provide a number of useful forms for children that can be adapted for any classroom. For example, a teacher could create a form that asks students questions about the kinds of activities they enjoy, the environment and seating arrangement that make them most comfortable, and their preferences for learning new information (presentation by the teacher, hands-on application, research and reading on their own). Teachers also can send questionnaires to parents, who often have insights about their children's learning that cannot be found elsewhere. Taking these steps at the beginning of the school year enables teachers to begin developing profiles of their students right away. Then, as they work with students in different learning situations, they gradually build on this foundation so that they can continue to adjust instruction to students' needs. In this regard, it also helps to take a little time to schedule mini-interviews with students to see how they feel about their work, the activities in class, and their own progress.

Managing the Process

Once teachers know the learning styles of their students, the goals within each unit, and the "exit points" in the curriculum where they can design alternative as-

signments, they will face a host of practical concerns: How will students move around the room? What level of noise is acceptable (especially in group work)? What is the best way to give directions when there are several groups doing different tasks? How should seating be arranged? What should the teacher's role be when students are working in groups (or independently) on projects? When should the teacher work with the different groups? What should the teacher do in cases where students finish their projects early?

Prepare the students. The more students understand what the new format in the classroom is all about, the more they can contribute to (rather than obstruct) the process. Talk to them about different learning styles and the fact that everyone has things they can do very well and other things that seem hard. Introduce them to the different learning styles and give them time to explore their own.

Establish routines. Differentiated instruction demands that students develop more responsibility for the classroom than when they're all sitting in straight lines doing the same thing. The process can become far more manageable with rules that govern such things as behavior in small groups and while moving about the room, noise level in the room, routines for rearranging seats, routines for distributing and collecting materials, and requests for help from the teacher or other students.

Delegate responsibilities. Teachers accustomed to the traditional teacher role may discover that they're doing more of the work than they actually need to. There are some tasks that could be delegated to students. For

example, assign a couple of children per week to distribute and collect all materials.

Set up ahead of time. The more teachers arrange ahead of time, the less they will have to think about when immersed in an active classroom. Consider ways to handle such tasks as the following: posting the children's names for groups (so they can find their own seats), storing students' work when finished (folders, bins), providing containers for the supplies on each table, and having other activities on hand in case some students finish early.

Provide clear directions. Many teachers find "workcards" (Heacox 2002) a helpful tool. These cards provide clear directions on assigned work for a group, pair, or individual and may also have criteria for quality performance and sometimes a checklist of all the steps students need to take. Workcards significantly increase students' autonomy and reduce the number of times they have to run to the teacher for guidance. Teachers usually use index cards that are color coded and laminated for repeated use.

Record student progress. Teachers should plan ahead for all the different ways they will monitor student progress and need. Consider the use of observations, informal talks with the students, checklists, reviews of student portfolios, their own self-evaluations, and consultations with parents. Teachers can design a method of keeping track of student progress that best suits their teaching schedule and style. Talking to each student or group of students about what they're doing and how

they feel can help teachers gauge whether they need to make changes in assigned work or student groups.

Assessment Strategies for a Differentiated Classroom

Assessment is critical in making differentiated instruction beneficial for all students. Educators sometimes talk about assessment, evaluation, and grading interchangeably. According to Rolheiser, Bower, and Stevahn (2000), each of these terms refers to a different part of the process: assessment involves gathering and reviewing data; evaluation critiques and judges the merits of student performance; and grading is a reporting system that represents this evaluation. Rather than a process that happens only at the end of a task (in a form that has little capacity to promote student growth), assessment should be a system that provides ongoing feedback *to the learners*, as well as to teachers and parents. It should give children useful information, guidance, and support that can help them improve *while they're working*.

Pre-Assessment

At this point, teachers want to find out how much of the content students already know, what skills they

possess, or what gaps in knowledge and conceptual understanding they have. Without this information, teachers cannot possibly gauge their progress. It would be a mistake, for example, to think that a child had achieved a great deal in a language arts lesson because he or she had written a strong essay on a book the class was reading. It could easily be that the child already knew the book, had a gift for language arts, and found the task an easy one.

This process should involve students in discussions, informal demonstrations, and explorations. In the end, teachers should know whether students have an exceptional knowledge, a basic understanding, a beginning knowledge, or no understanding or experience in the subject (Gregory and Chapman 2002).

Pre-assessment should include communication with parents, who may or may not recognize the strengths or learning styles of their children. In cases where families know relatively little about their children's strengths, weaknesses, and learning preferences, teachers should be willing to provide information and guidance. Following are some guidelines for communicating with parents:

- Give parents an overview of the ways talent can express itself (problem-solving ability, insight, creativity, artistry, musicality, improvisational ability, sensitivity toward others, leadership, physical grace and agility, etc.).
- Explain that input on the abilities and learning styles of their children will help in adjusting class activities to fit students' needs.

- Share information with them, for example, lists of books and other resources they can use to learn more on their own.

In many cases, parents are a mine of useful information about their children's abilities, learning problems, and learning styles. Consulting with them can save time and give students more support for their schoolwork at home.

Observation

In many cases, teachers need to consider a completely different approach to assessing behavior. Fundamental to a fair assessment of ability are the following:

- Look for ability in more domains than the academic (creative imagination, wit, improvisation, kinesthetic abilities, hands-on problem solving, etc.). Become aware of ideas about what potential looks like or what behaviors indicate strengths and abilities.
- Look beyond "good" or "bad" behavior. Consider the role that good behavior plays in the school's assessment of a child's ability. Do teacher-pleasers get more opportunity as a reward for their good behavior? While problem behaviors need to be handled, some children act up because of frustration with the style, level, or pace of classroom activities.
- Create activities that demand higher-level thinking and creative solutions. It is obvious that a child who needs hands-on activities to process information

and analyze a problem will not show his or her abilities if no such activities occur in the classroom. Be willing to incorporate different learning styles and materials so that more students can demonstrate their strengths.

- Allow students to express their ideas in different ways. For example, a child from another culture may have a novel solution to a problem, but may express this better through diagrams and drawings than through verbal or written expression. Offer these students a variety of ways to show what they are learning.
- Ask children about their work. Teachers shouldn't assume that they know what a student is trying to do or whether or not it works. Talk to the child. It may be that his idea is more interesting or sophisticated than his ability to express it. Uneven development is common in young children, and cultural differences may enhance this phenomenon.

Student Portfolios

As an adjunct to documenting behaviors, collecting actual samples of children's work expands the process of assessment. These samples could include: artwork, science experiments, construction projects, essays, conversations (written down or recorded), footage of problem-solving activities, and anecdotes. There are cases in which a child's thinking process does not show in a product one can see. This is where anecdotes become useful in filling in the blanks. Parents and community leaders, as well as other teachers, can contribute

their stories in an ongoing written record of students' abilities and achievement.

The advantage of portfolios is that they provide authentic evidence of ability and include a wider range of media, materials, and learning preferences than do tests. Portfolios also create meaningful partnerships between students and teachers as they make joint decisions about the contents of the portfolios, discuss student work in different categories, and project future goals and projects (Burke, Fogarty, and Belgrad 1994). As time passes, students become invested in their portfolios as a record of what they have accomplished and how far they have come.

To be effective, student portfolios should have the following components:

- A clearly stated purpose so that students understand what is expected;
- Evidence of links between course content and materials selected;
- A variety of products that demonstrate competency and growth in different areas;
- Direct correspondence between concepts learned and classroom instruction;
- Evidence of cognitive and creative growth in the learner through selected work (not just students' best work);
- Students' selections based on their self-evaluation and understanding of themselves as learners with unique academic and emotional needs; and

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- Development of the portfolio as a comprehensive source of information for a variety of purposes (Clark 2002, p. 31).

The primary focus of portfolios is on students' strengths — what they know, the skills they possess to process new knowledge, how they solve problems, and how well they can apply a concept to other contexts. Because there is no "ceiling," as in some tests, a child can reveal far more about his or her abilities. Traditional tests rarely provide detailed information on strengths.

Questioning and Self-Evaluation

When working with portfolios, the teacher needs to sit down with students individually and talk about their work. Simply reviewing the products is not enough. Teachers should ask students specific questions about their thinking, problem-solving strategies, and use of materials. Here is an example from a fifth-grade teacher I know:

> When I reviewed Anil's portfolio with him, I noticed that he included a humorous story about math mistakes that he did for our math class. When we discussed the story in detail, three things became clear: he loved writing more than math (something I never knew), he had a wonderful sense of humor which he rarely expressed in class, and he made some unique math discoveries through this assignment, which were not so obvious in the story itself (but were part of the process). For me, a portfolio conference is indispensable. I find out much more about a child's thinking process, strengths, and weaknesses, the way he views himself, and the learn-

ing styles he prefers. Without this process, I would not know Anil as I do today. I would not have been able to support his talent and interest in writing (which he doesn't get at home), nor would I understand the emotional barriers Anil struggles with that keep him from doing what he does best.

Meeting with students about their portfolios helps students understand their strengths and learning styles. A sad reality of conventional testing is that students rarely gain any insight about themselves as learners. All they know is whether they "mastered" certain content and the grades they received.

Children at every point on the ability spectrum need to develop a healthy approach to learning. Gifted students, for example, often think that they should be able to master new concepts on the first try and may hesitate to take any risks in the learning process. Children with learning disabilities may believe that they are below average and should not attempt tasks involving advanced skill or ability. In both cases, these students hold inaccurate views and expectations with respect to their potential and performance. When children understand *why* they find certain tasks hard, *how* they learn best (through what learning styles), and *what* steps they can take to build on their current level of achievement, learning loses its mystery. Then they can avoid slipping into potentially harmful self-assessments.

Grading

Differentiated instruction may not seem compatible with grading. After all, how can teachers affix a grade

to tasks that differ significantly? The focus of grades is not to compare the performance of students or to impose a penalty on children who have trouble finishing assignments. Rather, it is a means for the instructor, the students, and the parents to evaluate a child's achievement along a continuum. If students compete at all, it should be with themselves, with their own previous accomplishments.

In a differentiated classroom, teachers assess students for specific assignments, with the criteria for grades clearly described in each case. Teachers do not need to grade *everything*. As teachers design assignments, they decide which tasks and projects to evaluate. The following questions are worth considering:

- What competencies in each subject need to be measured and how should they be measured?
- What will an assessment of this task / project reveal in terms of the child's progress and growth?
- Does assessment allow students to show their abilities in a variety of contexts and formats?
- What part will students play in their own assessment?
- What communications are needed to be made to clarify to parents and others the grading system that was developed to benefit each student and stimulate future growth and learning?

Given the wide range of tasks that students do in a differentiated classroom, teachers will assign grades for different purposes:

- To measure student mastery of knowledge and skills;
- To track students' progress and review goals and achievement;
- To stimulate interest and effort by showing students what they have accomplished and what they need to progress farther; and
- To offer a source of information for different groups — students, parents, counselors, and administrators. (Gregory and Chapman 2002, p. 52)

In cases where teachers want to measure students' progress or achievement in specific content, they need to design pre- and post-assessments that clearly measure this information. These assessments (tests, tasks, products) should use students' preferred learning styles. The point of this process is to inform the students and teachers of progress made and to address specific areas where adjustments may be needed in the future.

When designing a differentiated curriculum, teachers have to confront the issue of grading assigned tasks at different levels of difficulty. The question arises: Is it fair to give an "A" to two students in cases where one has chosen a much more difficult project than the other? Despite the fact that differentiated classrooms generally avoid making comparisons between students, they cannot avoid making comparisons between projects or tasks.

Heacox (2002) offers a solution to this dilemma. Teachers provide clear criteria for an "A," a "B," and a "C" for each task or project. These criteria are based on

the level of challenge, rather than the amount of work. Every child, regardless of where he or she appears to be on the learning spectrum, should have an opportunity to attempt a more challenging task. In this scenario, no mystery lingers over the grading process. The students understand what an "A" grade will demand, and *they* decide whether they want to attempt it at this juncture. It is also possible to create an arrangement whereby students who need more time to work (because they have chosen more challenging tasks) can have their grade be a larger percentage of the final grade for that unit than it would for those who choose less challenging tasks.

Students need to know that, regardless of the activities they are doing (group work, independent study, etc.), they can expect clearly stated criteria for grading, they can expect to be graded *individually* regardless of whether they're doing group projects, and they can expect more freedom to participate in their own assessment and future development as learners.

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Conclusion

As teachers become familiar with the strategies that work best for themselves and their students, they can adapt and adjust instruction *gradually.* Learning to differentiate is not the work of a moment, but of extended periods of application and practice. It demands clear priorities and learning goals for each subject and a growing repertoire of strategies that give teachers the flexibility to adjust the curriculum in a variety of ways.

A differentiated classroom promises to reach many more students in the education system by responding to their individual learning styles, abilities, disabilities, and cultural and linguistic backgrounds.

References

Burke, K.; Fogarty, R.; and Belgrad, S. *The Mindful School: The Portfolio Connection, K-College.* Arlington Heights, Ill.: Skylight, 1994.

Clark, B. "Assessment that Empowers Teachers and Learners." *Gifted Education Communicator* 33 (2002): 10-11, 31-32.

Gardner, H. *Multiple Intelligences: The Theory in Practice.* New York: Basic Books, 1993.

Goertz, J. "Searching for Talent Through the Visual Arts." In *Underserved Gifted Populations,* edited by J.F. Smutny. Cresskill, N.J.: Hampton, 2002.

Gregory, G.H., and Chapman, C. *Differentiated Instructional Strategies: One Size Doesn't Fit All.* Thousand Oaks, Calif.: Corwin, 2002.

Heacox, D. *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3-12.* Minneapolis: Free Spirit, 2002.

Kolb, D. *Experiential Learning: Experience as the Source of Learning and Development.* Englewood Cliffs, N.J.: Prentice Hall, 1984.

McCarthy, B. "Using the 4MAT System to Bring Learning Styles to Schools." *Educational Leadership* 48, no. 2 (1990): 31-37.

Rolheiser, C.; Bower, B.; and Stevahn, L. *The Portfolio Organizer.* Alexandria, Va.: Association for Supervision and Curriculum Development, 2000.

Smutny, J.; Walker, S.Y.; and Meckstroth, E.A. *Teaching Young Gifted Children in the Regular Classroom.* Minneapolis: Free Spirit, 1997.

Tomlinson, C.A. *The Differentiated Classroom: Responding to the Needs of All Learners.* Alexandria, Va.: Association for Supervision and Curriculum Development, 1999.

Tomlinson, C.A.; Kaplan, S.N.; Renzulli, J.S.; Purcell, J.; Leppien, J.; and Burns, D. *The Parallel Curriculum: A Design to Develop High Potential and Challenge High-Ability Learners.* Thousand Oaks, Calif.: Corwin, 2002.

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53

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